

as stock feed, as the pile of fodder would undoubtedly serve as a hibernating place for these insects. Probably the most advisable procedure would be to cut the corn with as short a stubble as possible immediately after gathering the crop and burn it in wind rows in the infested fields. Then fall plow the field, plowing as close to the fences as possible to destroy possible hibernation quarters.

## SARCOPHAGIDÆ OF NEW ENGLAND: GENUS SARCOPHAGA

By R. R. PARKER

### *Sarcophaga aldrichi*, n. sp.

TYPE ♂: Massachusetts Agricultural College.

PARATYPES (♂): Massachusetts Agricultural College, one; United States National Museum, two (No. 19165); Boston Society of Natural History, one; Gypsy Moth Parasite Laboratory, Melrose Highlands, Mass., three; collection of Dr. J. M. Aldrich, one; collection of author, one.

(♂) Vestiture of both thorax and abdomen hairy throughout; only presutural pair of anterior acrostichals present, weak; anterior femur with but two rows of bristles, an upper and a lower, or, if present, bristles of intermediate row are very slender and hair-like; posterior face of posterior tibia with a row of scattered long hairs on distal half; second genital segment black or blackish.

*Length*.— $8\frac{1}{2}$  to  $11\frac{1}{2}$  mm.

*Head*.—Viewed from side parafrontals and genæ with dark reflections, transverse impression sometimes with a reddish tinge. Breadth of front at narrowest part about one half eye width; cheek height approximately one half that of eye. Front prominent; sides of frontal vitta converging backward by straight lines, rarely parallel. Second antennal segment dark; third about twice length of second; arista plumose on basal half or slightly more. Back of head somewhat convex with three or four rows of black cilia behind eyes, otherwise clothed with yellowish white or whitish hair that completely covers metacephalon. Cheeks clothed with black hair. Genæ clothed with scattered hairs. Palpi dark.

*Chatotaxy*.—Lateral verticals absent; vibrissæ sometimes inserted on line of oral margin, but usually very slightly above.

*THORAX*.—Metanotum clothed with fine, erect hair that is sometimes quite long. Hairs covering anterior spiracle dark basally, lighter toward tips; those of anterior margin of posterior spiracle dark brown; those of spiracular cover brownish with yellowish tips. Epaulets dark.

*WINGS*.—Bend of fourth vein normally a right angle; anterior cross-vein more basal than end of first longitudinal; third vein bristly; costal spine vestigial; section III of costa slightly greater than section V; alulae fringed with hairs; calypters whitish, margins fringed with whitish or slightly yellowish hairs.

<sup>1</sup> Contribution from the Entomological Laboratory of the Massachusetts Agricultural College.

**LEGS.**—Dark. Posterior trochanter without “brush” or latter so small as not to be distinguishable as such; femur cylindrical or sub-cylindrical, clothed beneath with medium long, scattered hair; anterior face with three rows of bristles, those of intermediate row shortest and not developed distally; posterior face without ventral row of bristles: tibia straight or slightly curved, a row of scattered, long hairs on distal half of lower posterior face: tarsus equal in length to tibia, fourth segment at least one half fifth. Middle coxa with a single row of bristles: femur clothed beneath on posterior, proximal half with fine, but rather short hair; anterior ventral row of short bristles complete, posterior row represented by “comb” on distal one-third to two-fifths: submesotibial bristle present. Anterior coxa with two rows of bristles; femur usually with two rows, but if three are present, intermediate row consists of very fine, hair-like, scarcely distinguishable bristles.

**Chatotaxy.**—Bristles usually long and slender. Anterior dorsocentrals, as a rule, scarcely shorter than posterior; only presutural pair of acrostichals developed, slender, others rarely present and if so, very hair-like; inner presuturals slender, nearly as long as anterior dorsocentrals: four pairs postsutural dorsocentrals; prescutellar acrostichals present: scutellar apicals present: sternopleurals, sometimes both sides with three or two but very commonly two on one side, three on the other: lower sternopleura with a single row of bristles, otherwise with long hair.

**ABDOMEN.**—Somewhat conical or slightly oval; hairy vestiture longer and finer beneath. Ventral plates, as a whole, with their sides slightly converging posteriorly, almost parallel; at sides vestiture long on all three, but centrally vestiture of third shortest and erect.

**Chatotaxy.**—Second segment usually without marginal bristles, at most they are hair-like and decumbent; third with two and often with weaker, hair-like bristles between these and laterals; fourth with complete row ending ventrally in long hairs.

**GENITAL SEGMENTS.**—Not conspicuous, normally but small part of first showing, often only membranous band joining the segments. First (g. s.<sub>1</sub>) ground color varies from brownish orange to blackish, grayish pollinose except “humps” which are not differentiated, vestiture about equal in length to that of second, in profile slightly arched, marginal bristles absent: second (g. s.<sub>2</sub>), rotund, anal area flattened and extending about to upper limit of posterior surface; shining black, often faintly grayish pollinose, sometimes with a brownish tinge. Forceps, normally not visible, blackish brown or orange brown; prongs flattened, their inner edges meeting ridge-like for more than two thirds their length then separated, but tips so bent that edges normally meet just before the extremities of prongs, the latter spreading slightly, vestiture increases in length and amount basally; base with upward flap-like extensions. Connecting membrane just anterior to “humps” with a row of long, slender hairs on each side.

**GENITALIA.**—Heavily chitinized portions of head of penis (p.) black or blackish: anterior claspers (a. c.) broad and flattened: accessory plates (a. p.) brownish orange, hairy, and with an almost linear extension that parallels forceps for a way. Inner edges of lamellæ of fourth ventral plate fringed with hairs. (p. c. = posterior clasper.)

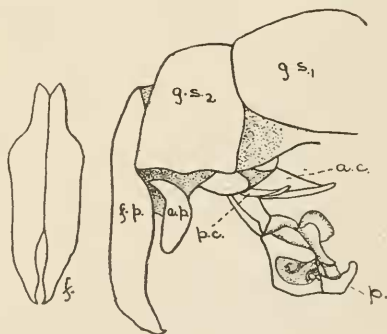


Fig. 31. *Sarcophaga aldrichi*, genital segments.

(♀) Not definitely known.

Described from 11 male specimens, 71 others examined.

RANGE.—New England: Mass.; Wellesley, Westfield, Melrose Highlands, Harwich, Forest Hills, Lunenburg.

United States: N. Y.

Foreign: Canada (Quebec).

This species is named in honor of Dr. J. M. Aldrich.

The bristles are long and slender, except on the legs. It is peculiar that the left sternopleura often bears two sternopleurals, the right one three, while in none of the specimens examined was the reverse condition found. The rows of cilia should be counted on that portion of the back of the head which is nearest the epicephalon. In exposing the genitalia the forceps are likely to be spread and flattened out so that they do not appear normal.

*S. aldrichi* is extremely similar to *S. uliginosa* Kramer. Though the penes are distinctive, those external characters which have a differential value are somewhat variable. The most constant distinctive character seems to be the presence of a row of long, scattered hairs on the distal half of the lower posterior face of the hind tibia, while in *S. uliginosa* the hairs are close set and form a distinct beard on the distal three-fourths. The number of rows of black cilia behind the eyes, commonly a reliable specific character, varies in both species. In *aldrichi* there are usually but two rows of bristles on the anterior femur, but sometimes an intermediate row is weakly developed; *uliginosa*, on the other hand, commonly has three rows though occasionally the intermediate one is so weak as to resemble that condition in *aldrichi*. *Uliginosa* seems to constantly have three sternopleurals, in *aldrichi* the number varies. In the former anterior acrostichal bristles, except the presutural pair, are usually absent, while in *uliginosa* all are commonly present; but again this character varies in both. Though the penes are specific, the fourth ventral plates are alike, as are also the forceps.

*S. aldrichi* agrees with *S. uliginosa* Kramer, *S. utilis* Aldrich, *S. sarraceniae* Riley, *S. exuberans* Pandellé, *S. harpax* Pandellé and three undescribed New England species in the absence of marginal bristles on the first abdominal segment. These bristles are sometimes absent in *S. sinuata* Meigen. It agrees with *S. uliginosa* Kramer, *S. sarraceniae* Riley, *S. exuberans* Pandellé, *S. harpax* Pandellé, *S. hamorrhoidalis* Meigen, *S. dalmatina* Schiner, *S. falculata* Pandellé and one undescribed species in the presence of a row of long, slender hairs on each side of the connecting membrane just anterior to the humps of the first genital segment. This is rather obscure, and interesting to show

possible relationship rather than as a convenient specific character. These hairs are always in line with the spiracles on each side and the significance of their presence is not quite clear, unless as representing the remains of the vestigial sixth abdominal segment, the so-called fourth ventral plate of taxonomy being its sternum.

Among material examined from the Gypsy Moth Laboratory at Melrose Highlands were a number of specimens of *S. aldrichi* recorded as reared from pupæ of *Porthetria dispar* (L.), collected at Melrose, Wakefield, North Saugus, Woburn, North Andover, Beverly, Essex, Topsfield, Gloucester, and Swampscott. Certain of these cities should appear under the range, but there are no means of discrimination. Of Sarcophagidæ collected at Lunenburg, Massachusetts, during the summer of 1914 by R. T. Webber of the Gypsy Moth Laboratory, this species is by far the most numerous.

I am indebted to Professor J. M. Aldrich for the following notation which he received from Professor Lawson Cæsar, Provincial Entomologist of Ontario: "In the last three years forest tent caterpillars (*M. disstria*) have been very abundant in the eastern parts of Ontario. Last year when visiting that part of the province on some entomological work, I observed that nearly 90 per cent of the cocoons opened in July showed the presence of a dipterous larva, which I supposed would be a Tachinid. However, from about two dozen of these cocoons brought back with me to Guelph there have emerged eight Sarcophagids and no Tachinids." Specimens were determined by Dr. Aldrich as *S. aldrichi*.

While examining material collected at Lenox, Massachusetts, during June, 1915, by C. W. Johnson of the Boston Society of Natural History, this species was noted to be very numerous. Conversation with Mr. Johnson established the fact that caterpillars of *Malacosoma disstria* Hübner were abundant in that locality.

Except for a few scattered specimens captured in isolated localities, the only records the writer has of the occurrence of this species in abundance have been where there were larvæ of either *Porthetria dispar* or *Malacosoma disstria*, especially the latter. The true status of this species in the economy of nature may be a point worth determination.